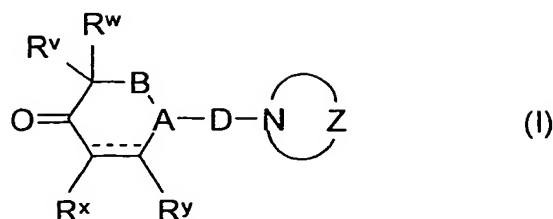


What is claimed is:

1. A compound of the general formula I



where

$\begin{array}{c} * \\ | \\ * - A - * \end{array}$  is a group of the formulae  $\begin{array}{c} * \\ | \\ * - N = W \end{array}$  or  $\begin{array}{c} * \\ | \\ * - N - C(R^p)(R^q) \end{array}$  where D is bonded to the nitrogen atom and where

$R^p$  and  $R^q$  are each independently selected from hydrogen, halogen, optionally substituted  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -cycloalkyl,  $C_2$ - $C_6$ -alkenyl,  $C_2$ - $C_6$ -alkynyl,  $C_1$ - $C_6$ -alkoxy,  $C_3$ - $C_6$ -cycloalkyloxy,  $C_3$ - $C_6$ -cycloalkyl- $C_1$ - $C_4$ -alkyloxy and optionally substituted phenyl;

W is O, S or an  $N-R^z$  group where  $R^z$  is selected from optionally substituted  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -cycloalkyl,  $C_2$ - $C_6$ -alkenyl,  $C_2$ - $C_6$ -alkynyl,  $C_1$ - $C_6$ -alkoxy,  $C_3$ - $C_6$ -cycloalkyloxy,  $C_3$ - $C_6$ -cycloalkyl- $C_1$ - $C_4$ -alkyloxy and optionally substituted phenyl

and \* denotes the bonding sites;

-B- is a bond or  $\begin{array}{c} R^m \quad R^n \\ \diagdown \quad \diagup \\ * \quad \quad * \end{array}$  where  $R^m$  and  $R^n$  are each independently selected from hydrogen, halogen, optionally substituted  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -cycloalkyl,  $C_2$ - $C_6$ -alkenyl,  $C_2$ - $C_6$ -alkynyl,  $C_1$ - $C_6$ -alkoxy,  $C_3$ - $C_6$ -cycloalkyloxy,  $C_3$ - $C_6$ -cycloalkyl- $C_1$ - $C_4$ -alkyloxy and optionally substituted phenyl, or, when the nitrogen in the A group is bonded to B, may also be a carbonyl group, and \* denotes the bonding sites;

----- represents a single bond or a double bond;

$R^v$ ,  $R^w$  are each independently hydrogen, halogen, optionally substituted  $C_1$ - $C_6$ -alkyl,  $C_1$ - $C_6$ -alkoxy,  $C_2$ - $C_6$ -alkenyl,  $C_2$ - $C_6$ -alkynyl,  $C_3$ - $C_6$ -cycloalkyloxy,

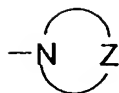
C<sub>3</sub>-C<sub>6</sub>-cycloalkyl-C<sub>1</sub>-C<sub>4</sub>-alkyloxy or C<sub>3</sub>-C<sub>6</sub>-cycloalkyl;

R<sup>x</sup>, R<sup>y</sup> are each independently hydrogen, halogen, optionally substituted C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenyl, C<sub>2</sub>-C<sub>6</sub>-alkynyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyloxy, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl-C<sub>1</sub>-C<sub>4</sub>-alkyloxy or C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, or

R<sup>x</sup>, R<sup>y</sup>, together with the carbon atoms to which they are bonded, may also form a fused phenyl ring or a fused 5- or 6-membered aromatic heterocycle which has 1, 2, 3 or 4 heteroatoms which are selected from N, O and S, where the fused phenyl ring and the fused aromatic heterocycle may have 1, 2 or 3 substituents which are selected from optionally substituted C<sub>1</sub>-C<sub>6</sub>-alkyl, CN, OR<sup>1</sup>, NR<sup>2</sup>R<sup>3</sup>, NO<sub>2</sub>, SR<sup>4</sup>, SO<sub>2</sub>R<sup>4</sup>, SO<sub>2</sub>NR<sup>2</sup>R<sup>3</sup>, CONR<sup>2</sup>R<sup>3</sup>, COOR<sup>5</sup>, COR<sup>6</sup>, C<sub>1</sub>-C<sub>4</sub>-haloalkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenyl, C<sub>2</sub>-C<sub>6</sub>-alkynyl, C<sub>2</sub>-C<sub>6</sub>-alkenyloxy, C<sub>2</sub>-C<sub>6</sub>-alkynyloxy, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyloxy and halogen; where

R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> are each independently H, optionally substituted C<sub>1</sub>-C<sub>6</sub>-alkyl or optionally substituted phenyl, where R<sup>3</sup> may also be a COR<sup>7</sup> group where R<sup>7</sup> is hydrogen, optionally substituted C<sub>1</sub>-C<sub>4</sub>-alkyl or optionally substituted phenyl, where R<sup>2</sup> with R<sup>3</sup> may also together form a 5- or 6-membered, saturated or unsaturated carbocycle which may have a heteroatom selected from O, S and NR<sup>8</sup> as a ring member, where R<sup>8</sup> is hydrogen or C<sub>1</sub>-C<sub>4</sub>-alkyl,

D is a linear or branched 2- to 10-membered alkylene chain which may have, as chain members, a heteroatom group K which is selected from O, S, S(O), S(O)<sub>2</sub>, N-R<sup>8</sup>, CO-O, C(O)NR<sup>8</sup>, and/or 1 or 2 nonadjacent carbonyl groups and which may include a cycloalkanediyl group and/or may have a double or triple bond;



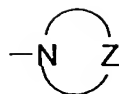
is a saturated or monounsaturated, monocyclic nitrogen heterocycle having from 5 to 8 ring members or a bicyclic saturated nitrogen heterocycle having from 7 to 12 ring members, where the mono- and the bicyclic nitrogen heterocycle optionally has, as a ring member, a further heteroatom selected from oxygen, sulfur or nitrogen, where the mono- or bicyclic nitrogen heterocycle may be unsubstituted or bears an R<sup>a</sup> radical, where

R<sup>a</sup> is C<sub>1</sub>-C<sub>10</sub>-alkyl, C<sub>2</sub>-C<sub>10</sub>-alkenyl, C<sub>1</sub>-C<sub>10</sub>-alkoxycarbonyl, C<sub>1</sub>-C<sub>10</sub>-alkylcarbonyl, C<sub>1</sub>-C<sub>10</sub>-alkylsulfonyl, C<sub>1</sub>-C<sub>10</sub>-cyanoalkyl, C<sub>3</sub>-C<sub>10</sub>-

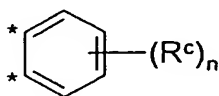
cycloalkyl, C<sub>3</sub>-C<sub>10</sub>-cycloalkyl-C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>3</sub>-C<sub>10</sub>-cycloalkylcarbonyl, C<sub>3</sub>-C<sub>10</sub>-cycloalkylcarbonyl-C<sub>1</sub>-C<sub>4</sub>-alkyl, phenylcarbonyl, phenylcarbonyl-C<sub>1</sub>-C<sub>4</sub>-alkyl, phenoxycarbonyl, phenyl-C<sub>1</sub>-C<sub>10</sub>-alkyloxycarbonyl, 3- to 8-membered heterocyclylcarbonyl or 3- to 8-membered heterocyclylcarbonyl-C<sub>1</sub>-C<sub>4</sub>-alkyl, where heterocyclyl in the aforementioned radicals may have one, two or three heteroatoms selected from S, O and N, and

where the last 6 radicals may have, on the heterocycle or on the phenyl ring, 1, 2 or 3 substituents R<sup>b</sup> which are each independently selected from optionally substituted C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub>-alkenyl, C<sub>2</sub>-C<sub>6</sub>-alkynyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, C<sub>4</sub>-C<sub>10</sub>-bicycloalkyl and C<sub>6</sub>-C<sub>10</sub>-tricycloalkyl, where the last three groups may optionally be substituted by halogen or C<sub>1</sub>-C<sub>4</sub>-alkyl, halogen, CN, OR<sup>1</sup>, NR<sup>2</sup>R<sup>3</sup>, NO<sub>2</sub>, SR<sup>4</sup>, SO<sub>2</sub>R<sup>5</sup>, CONR<sup>2</sup>R<sup>3</sup>, SO<sub>2</sub>NR<sup>2</sup>R<sup>3</sup>, COOR<sup>5</sup>, COR<sup>6</sup>, O-COR<sup>6</sup>, 5- or 6-membered heterocyclyl having 1, 2 or 3 heteroatoms selected from O, S and N, and phenyl, where phenyl and heterocyclyl in the last two substituents R<sup>b</sup> may optionally bear one or two substituents which are each independently selected from C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy, NR<sup>2</sup>R<sup>3</sup>, CN, C<sub>1</sub>-C<sub>2</sub>-fluoroalkyl and halogen, and where 2 substituents R<sup>b</sup> bonded to adjacent carbon atoms of the aromatic radical may together be C<sub>3</sub>- or C<sub>4</sub>-alkylene, or, together with the carbon atoms to which they are bonded, may be a fused-on, unsaturated 5- or 6-membered carbocycle or a 5- or 6-membered heterocycle having 1 or 2 nitrogen atoms as ring members; or

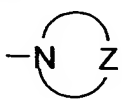
R<sup>a</sup> is an E-Ar group wherein E is a bond or linear or branched alkylene having from 1 to 4 carbon atoms and in particular (CH<sub>2</sub>)<sub>p</sub> where p is 0, 1, 2, 3 or 4, and Ar is selected from phenyl, naphthyl and 5- or 6-membered heteroaryl which has one, two or three heteroatoms selected from S, O and N as ring members and which may optionally have 1, 2 or 3 of the aforementioned substituents R<sup>b</sup>; or



is a saturated monocyclic nitrogen heterocycle having from 5 to 7 ring atoms which bears a fused-on benzene ring of the formula

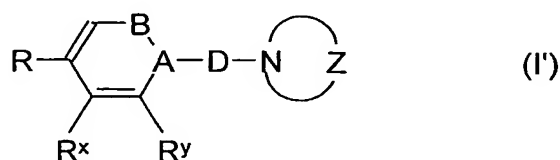


where \* denotes the bonding sites to the saturated monocyclic heterocycle;  $R^c$  may be the same or different and is as defined for  $R^b$ , and  $n$  is 0, 1, 2 or 3;

5 where  may optionally also have 1, 2, 3 or 4 further  $C_1$ - $C_4$ -alkyl groups as substituents;

the physiologically acceptable acid addition salts of this compound and the tautomer of the formula I'

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where  $R$  is halogen, an  $O-R^1$  group where  $R^1$  is as defined above, or an  $O-C(O)R^9$  group where  $R^9$  is hydrogen, optionally substituted  $C_1$ - $C_6$ -alkyl, benzyl or phenyl, where the last two radicals are optionally substituted by one or two radicals which are each independently selected from  $C_1$ - $C_4$ -alkyl, OH,  $C_1$ - $C_4$ -alkoxy,  $NR^2R^3$ , CN,  $C_1$ - $C_2$ -fluoroalkyl or halogen, and the physiologically acceptable acid addition salts of the tautomer I'.

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20 2. A compound of the general formula I or I' as claimed in claim 1, where  $R^x$ ,  $R^y$ , together with the carbon atoms to which they are bonded, are a fused phenyl ring or a fused 5- or 6-membered aromatic heterocycle which has 1, 2, 3 or 4 heteroatoms which are selected from N, O and S, where the fused phenyl ring and the fused aromatic heterocycle may have 1, 2 or 3 substituents which are selected

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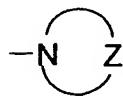
3. A compound as claimed in either of the preceding claims, where  $D$  in the formulae I and I' is a  $(CH_2)_k$  group or a  $C(O)(CH_2)_l$  group, where  $k$  is 3, 4, 5 or 6 and  $l$  is 2, 3, 4 or 5.

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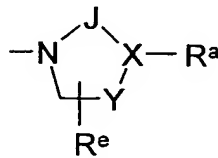
4. A compound as claimed in any of the preceding claims, where  $A$  is  $N-C(O)$  in which the carbon atom is bonded to the variable  $B$ .

5. A compound as claimed in claim 4, where B is CH<sub>2</sub>.
6. A compound of the general formula I or I' as claimed in any of the preceding claims, where

5



is a radical of the formula  
above, and



where R<sup>a</sup> is as defined

J is CH<sub>2</sub>, CH<sub>2</sub>-CH<sub>2</sub> or CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>;

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X is CH or N and

Y is CH<sub>2</sub>, CH<sub>2</sub>-CH<sub>2</sub> or CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>, or Y-X together is CH=C or CH<sub>2</sub>-CH=C;

15

R<sup>e</sup> is hydrogen or C<sub>1</sub>-C<sub>4</sub>-alkyl.

7. A compound as claimed in claim 6, where J is CH<sub>2</sub>-CH<sub>2</sub> and Y is CH<sub>2</sub>.
8. A compound as claimed in claim 6 or 7, where X is N.
9. A compound of the general formula I or I' as claimed in claim 6, where R<sup>a</sup> is an E-Ar group where E and Ar are each as defined above.
10. A compound as claimed in claim 9, where E is a bond.
11. A compound as claimed in claim 10, where Ar is phenyl, pyridyl, pyrimidinyl or s-triazinyl, each of which has 1, 2 or 3 of the aforementioned R<sup>b</sup> radicals.
12. A compound as claimed in claim 9, where E is CH<sub>2</sub>.
13. A compound as claimed in claim 12, where Ar is phenyl, naphthyl, pyridyl, pyridinyl, pyrazinyl, pyridazinyl, thienyl, furyl, pyrrolyl, pyrazolyl, imidazolyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, 1-oxa-3,4-diazolyl or 1-thia-3,4-diazolyl, each of which is unsubstituted or may have 1, 2 or 3 of the abovementioned R<sup>b</sup> radicals.
14. A compound as claimed in any of claims 6 to 8, where R<sup>a</sup> is C<sub>1</sub>-C<sub>10</sub>-alkyl, C<sub>2</sub>-C<sub>10</sub>-alkenyl, C<sub>3</sub>-C<sub>10</sub>-cycloalkyl, C<sub>3</sub>-C<sub>10</sub>-cycloalkyl-C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>3</sub>-C<sub>10</sub>-

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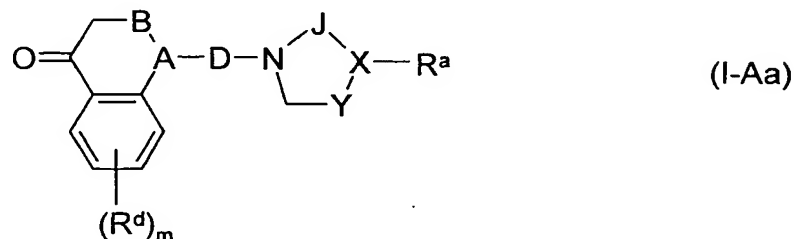
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cycloalkylcarbonyl-C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>3</sub>-C<sub>10</sub>-heterocycloalkyl-C<sub>1</sub>-C<sub>4</sub>-alkyl or C<sub>3</sub>-C<sub>10</sub>-heterocycloalkylcarbonyl-C<sub>1</sub>-C<sub>4</sub>-alkyl.

15. A compound of the general formula I-Aa

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where R<sup>a</sup>, A, B and D are each as defined in claim 1;

10

m is 0, 1, 2 or 3;

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R<sup>d</sup> are each independently C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-hydroxyalkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-C<sub>4</sub>-alkyl, CN, OR<sup>1</sup>, NR<sup>2</sup>R<sup>3</sup>, NO<sub>2</sub>, SR<sup>4</sup>, SO<sub>2</sub>R<sup>4</sup>, SO<sub>2</sub>NR<sup>2</sup>R<sup>3</sup>, CONR<sup>2</sup>R<sup>3</sup>, COOR<sup>5</sup>, COR<sup>6</sup>, C<sub>1</sub>-C<sub>2</sub>-fluoroalkyl, C<sub>1</sub>-C<sub>2</sub>-fluoroalkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenyl, C<sub>2</sub>-C<sub>6</sub>-alkynyl, C<sub>2</sub>-C<sub>6</sub>-alkenyloxy, C<sub>2</sub>-C<sub>6</sub>-alkynyloxy, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl or halogen, where R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> are each as defined in claim 1;

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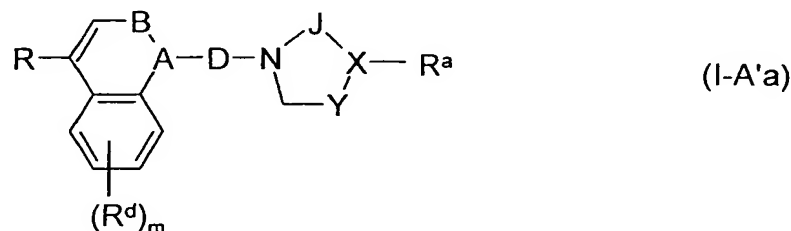
J is CH<sub>2</sub>, CH<sub>2</sub>-CH<sub>2</sub> or CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>;

X is CH or N and

Y is CH<sub>2</sub>, CH<sub>2</sub>-CH<sub>2</sub> or CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>, or Y-X together is CH=C or CH<sub>2</sub>-CH=C;

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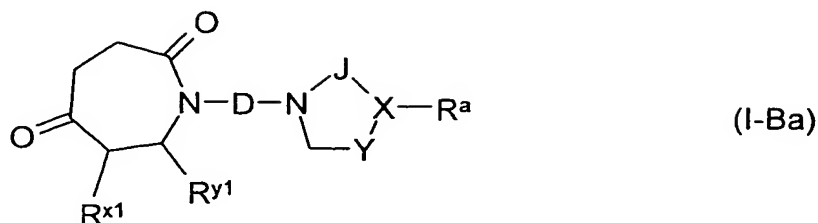
the physiologically acceptable acid addition salts of this compound and the tautomer of the formula I-A'a



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where R is as defined in claim 1 and the physiologically acceptable acid addition salts of the tautomer Ia'.

16. A compound of the formula I-Ba



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where  $R^a$  and D are each as defined in claim 1;

$R^{x1}$ ,  $R^{y1}$  are each independently hydrogen, halogen, optionally substituted  $C_1$ - $C_6$ -alkyl,  $C_1$ - $C_6$ -alkoxy,  $C_2$ - $C_6$ -alkenyl,  $C_2$ - $C_6$ -alkynyl,  $C_3$ - $C_6$ -cycloalkyloxy,  $C_3$ - $C_6$ -cycloalkyl- $C_1$ - $C_4$ -alkyloxy or  $C_3$ - $C_6$ -cycloalkyl;

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J is  $CH_2$ ,  $CH_2-CH_2$  or  $CH_2-CH_2-CH_2$ ;

X is CH or N and

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Y is  $CH_2$ ,  $CH_2-CH_2$  or  $CH_2-CH_2-CH_2$ , or Y-X together is  $CH=C$  or  $CH_2-CH=C$ ;

and the physiologically acceptable acid addition salts of the compound I-Ba.

20 17. A compound as claimed in claim 15 or 16, where J is  $CH_2-CH_2$  and Y is  $CH_2$ .

18. A compound as claimed in any of claims 15 to 17, where X is N.

19. A compound of the general formula I or I' as claimed in any of claims 15 to 18,  
25 where  $R^a$  is an E-Ar group in which E and Ar are each as defined above.

20. A compound as claimed in claim 19, where E is a bond.

21. A compound as claimed in claim 20, where Ar is phenyl, pyridyl, pyrimidinyl or  
30 s-triazinyl, each of which has 1, 2 or 3 of the aforementioned  $R^b$  radicals.

22. A compound as claimed in claim 19, where E is  $CH_2$ .

23. A compound as claimed in claim 22, where Ar is phenyl, naphthyl, pyridyl, pyridi-  
35 nyl, pyrazinyl, pyridazinyl, thienyl, furyl, pyrrolyl, pyrazolyl, imidazolyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, 1-oxa-3,4-diazolyl or 1-thia-3,4-

diazolyl, each of which is unsubstituted or may have 1, 2 or 3 of the abovementioned R<sup>b</sup> radicals

24. A compound as claimed in any of claims 15 to 18, where R<sup>a</sup> is C<sub>1</sub>-C<sub>10</sub>-alkyl, C<sub>2</sub>-C<sub>10</sub>-alkenyl, C<sub>3</sub>-C<sub>10</sub>-cycloalkyl, C<sub>3</sub>-C<sub>10</sub>-cycloalkyl-C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>3</sub>-C<sub>10</sub>-cycloalkylcarbonyl-C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>3</sub>-C<sub>10</sub>-heterocycloalkyl-C<sub>1</sub>-C<sub>4</sub>-alkyl or C<sub>3</sub>-C<sub>10</sub>-heterocycloalkylcarbonyl-C<sub>1</sub>-C<sub>4</sub>-alkyl.
25. A pharmaceutical composition comprising at least one active ingredient which is selected from compounds of the formula I, the tautomers of the formula I', the physiologically tolerated acid addition salts of the compounds I and the physiologically tolerated acid addition salts of the tautomers of the formula I' as claimed in any of claims 1 to 24, optionally together with physiologically acceptable carriers and/or excipients.
26. The use of active ingredients which are selected from compounds of the formula I, the tautomers of the formula I', the physiologically tolerated acid addition salts of the compounds I and the physiologically tolerated acid addition salts of the tautomers of the formula I' as claimed in any of claims 1 to 24 for producing a pharmaceutical composition for treating diseases which respond to the influence of dopamine D<sub>3</sub> receptor antagonists or agonists.
27. The use as claimed in claim 26 for treating diseases of the central nervous system.
28. The use as claimed in claim 26 for treating kidney function disorders.